



August 15, 2019

VIA OVERNIGHT DELIVERY

Damon Circosta
Chair, North Carolina State Board of Elections
430 N. Salisbury St.
Raleigh, NC 27603

Re: Decertification and Replacement of North Carolina's iVotronic Voting Machines

Dear Chair Circosta:

We write to urge you to ensure that every voter in North Carolina has access to a voting system in 2020 that is sufficiently reliable to guarantee their fundamental right to vote. In particular, the North Carolina State Board of Elections ("NCSBE," or the "Board") should ensure that, going into 2020, North Carolina counties may no longer use the Election Systems & Software ("ES&S") iVotronic Direct Recording Electronic ("DRE") machines. Under currently operative law, counties are required to retire these machines by December 1, 2019. However, the North Carolina legislature is currently considering bills that would allow a county to petition the Board for authorization to continue using its DRE machines until December 1, 2020. Enactment of any of those bills, however, would not change the fundamental problem: the continued use of the iVotronic system violates the constitutional rights of voters to access a reliable voting system that will ensure that their votes are properly counted.

The iVotronic system suffers from serious deficiencies. Leading security researchers have repeatedly demonstrated that it lacks sufficient safeguards to meet the demands of the current threat environment facing election systems. Accordingly, we write to formally request that you take immediate action to guarantee that no North Carolina voter is forced to vote using the iVotronic system in 2020, either by exercising the Board's authority to decertify that system or by committing that, even if the legislature changes the decertification deadline, the Board will not authorize any county to continue using the system after December 1, 2019.

I. Background

Foreign actors attempted to interfere with the 2016 national elections, and there is an acute risk that they will interfere with the upcoming presidential election. The Senate Select Committee on Intelligence has concluded that, during the 2016 election cycle, the Russian government targeted the election systems of all 50 states in a campaign to scan and infiltrate state election infrastructure. S. Select Comm. on Intelligence, 116th Cong., *Russian Active Measures Campaigns and Interference in the 2016 U.S. Election, Volume 1: Russian Efforts Against*

Election Infrastructure, at 12 (2019) (hereinafter “*Russian Active Measures Campaigns*”).¹ While the Board has publicly stated that North Carolina was not among the states notified that its systems were scanned, we understand the Board in 2016 did not maintain sufficient logs needed to detect attempts that may have occurred. Previously, the Senate Intelligence Committee found that DRE machines “are at highest risk for security flaws” and called for their replacement. Staff of S. Select Comm. On Intelligence, 115th Cong., *Russian Targeting of Election Infrastructure During the 2016 Election: Summary of Initial Findings and Recommendations*, at 4 (2018).² Recognizing these threats, in late July of this year, the Committee emphasized that “states should take urgent steps to replace outdated and vulnerable voting systems.” *Russian Active Measures Campaigns* at 58.³ Also in late July, former FBI Director and Special Counsel Robert Mueller testified to the House Permanent Select Committee on Intelligence that Russian attempts to interfere in the elections continue and will continue into the 2020 cycle. *Open Hearing on the Investigation into Russian Interference in the 2016 Presidential Election Before the H. Permanent Select Comm. on Intelligence*, 116th Cong. (2019) (comments by Robert S. Mueller III, Former Spec. Counsel, in response to questioning by Rep. Will Hurd, Member, H. Permanent Select Comm. on Intelligence).⁴

The iVotronic machines are precisely the kind of insecure DRE machines that must be replaced to protect the integrity of elections. Flaws in the iVotronic’s hardware and software create vulnerabilities that sophisticated hackers could exploit in a manner that would cause widespread disruption. In 2007, several leading computer security and computer science experts examined the iVotronic system in a report commissioned by the Ohio Secretary of State. They concluded that it “lack[s] the fundamental technical controls necessary to guarantee a trustworthy election under operational conditions.” Ohio Sec’y of State, *EVEREST: Evaluation and Validation of Election-Related Equipment, Standards and Testing, Final Report*, at 29 (2007).⁵ A separate group of researchers commissioned by the Florida Department of State reached similar conclusions about iVotronic machines. Alec Yasinsac et al., *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware* 58 (2007).⁶

Even without foreign interference, these machines have experienced calibration issues that render them unreliable at properly recording North Carolinians’ votes. For example, in 2014, 1 voter out of every 1,000 in Wilson County had their vote flipped by a machine, and the same happened for a handful of voters in Guilford County. *Calibration Problems Reported for Voting Machines in Wilson, Guilford*, WRAL.com, Nov. 3, 2014.⁷ Mecklenburg County voters complained of similar issues after the 2018 elections. Jim Morrill, *Back to the Future?*

¹ https://www.intelligence.senate.gov/sites/default/files/documents/Report_Volume1.pdf

² <https://www.burr.senate.gov/imo/media/doc/RussRptInstlmt1-%20ElecSec%20Findings,Recs2.pdf>.

³ https://www.intelligence.senate.gov/sites/default/files/documents/Report_Volume1.pdf.

⁴ See exchange beginning at 1:52:23, <https://www.c-span.org/video/?462629-1/robert-mueller-testifies-house-intelligence-committee>.

⁵ <https://www.eac.gov/assets/1/28/EVEREST.pdf>.

⁶ <https://people.eecs.berkeley.edu/~daw/papers/sarasota07.pdf>.

⁷ <https://www.wral.com/calibration-problems-reported-for-voting-machines-in-wilson-guilford/14145524/>.

Mecklenburg County Planning to Go to Paper Ballots by 2020, Charlotte Observer, Nov. 21, 2018.⁸

The difficulty of meaningful post-election audits compounds the security vulnerabilities endemic to the iVotronic system. The iVotronic machines do not utilize or create any paper ballot. Although they have been modified in North Carolina to print a voter-verifiable paper audit trail (VVPAT)—essentially, a paper receipt that a voter can see scrolling under clear plastic at the moment they log any vote—the VVPAT is insufficient to remedy the machines’ deficiencies. Research has shown that VVPATs “are difficult to accurately audit and that voters often fail to notice if the printed record doesn’t match their votes.” *Russian Active Measures Campaigns* at 42 n. 298 (quoting Written Statement by J. Alex Halderman, June 21, 2017). Experts in election administration agree that post-election audits are an indispensable element in securing elections against cyberattack. *See, e.g.*, Lawrence Norden et al., Brennan Center for Justice, *Post-Election Audits: Restoring Trust in Elections*, (2007); American Statistical Association, *Statement on Risk-Limiting Post-Election Audits* (Apr. 17, 2010).⁹ Moreover, the VVPAT does not provide the voter with the opportunity to review all their selections when they are finished voting, significantly reducing the ability of individual voters to engage in meaningful oversight.

The North Carolina legislature has recognized the urgent need to replace the aging DRE machines. In 2013, the legislature enacted a bill to decertify the DRE machines as of January 2018. *See* Voter Information Verification Act, secs. 30.8–30.9, 2013 N.C. Sess. Laws 1505, 1574. After that date, only voting equipment that used paper ballots would be permissible in North Carolina. *Id.* Subsequently, the legislature has twice extended the deadline for decertifying DREs to allow the Board and the counties more time to choose new voting systems. *See* Act of June 22, 2015, secs. 6.(a)–(b)., §§ 30.8–9, 2015 N.C. Sess. Laws 225, 229–230; Act of June 20, 2018, secs. 3.11.(a)–(b), §§ 30.8–9, 2018 N.C. Sess. Law 278, 286–287. But the decertification of the DREs should not be delayed further. It is time to decertify the machines now.¹⁰

II. Legal Framework

The iVotronic machines must be decertified because continuing their use impermissibly burdens the voting rights of voters in counties using that system. The constitutional right to vote is not satisfied by simply allowing a voter to place a ballot in a ballot box or enter selections on a touchscreen. The Constitution guarantees each voter the right to cast an effective vote—that is, a ballot that is counted correctly towards the outcome of the election. The Supreme Court has held that “[o]bviously included within the right to choose, secured by the Constitution, is the right of qualified voters within a state to cast their ballots and have them counted.” *United States v.*

⁸ <https://www.charlotteobserver.com/news/politics-government/election/article221669965.html>.

⁹ https://www.brennancenter.org/sites/default/files/legacy/d/download_file_50228.pdf;
http://www.amstat.org/asa/files/pdfs/POL-Risk-Limiting_Endorsement.pdf.

¹⁰ We recognize the imperative of ensuring access to the polls for voters with disabilities. The approach taken in North Carolina’s existing hand-marked paper ballot jurisdictions, which provides access to an automated ballot-marking device for voters who need it, is the right one.

Classic, 313 U.S. 299, 315 (1941); see also *United States v. Saylor*, 322 U.S. 385, 387–88 (1944). The federal Constitution further prohibits states from subjecting voters to arbitrary disparities in the effectiveness of their votes. See *Bush v. Gore*, 531 U.S. 98, 104–05 (2000) (“Having once granted the right to vote on equal terms, the State may not, by later arbitrary and disparate treatment, value one person’s vote over another.”). The North Carolina Constitution similarly protects voters’ rights. See *State ex rel. Martin v. Preston*, S.E.2d 473, 481 (N.C. 1989) (citing *White v. Pate*, 308 S.E.2d 199, 205 (N.C. 1983)).

Indeed, a federal district court in Georgia recently applied these principles in ruling that plaintiffs challenging a similar DRE system are likely to succeed on the merits of their case. The plaintiffs in *Curling v. Kemp*, 334 F. Supp. 3d 1303, 1316 (N.D. Ga. 2018), challenged the constitutional adequacy of Georgia’s DRE system. Like the iVotronic system, that system also suffers from significant security flaws resulting from vulnerabilities in its architecture and software. *Id.* at 1308. The plaintiffs in *Curling* claimed that the continued use of Georgia’s DRE-based system violates their right to vote under the Due Process Clause and Equal Protection Clause of the Fourteenth Amendment. *Id.* at 1312. Following a preliminary injunction hearing, the court found that “Plaintiffs have shown that their Fourteenth Amendment rights to Due Process and Equal Protection have been burdened. Put differently, the State’s continued reliance on the use of DRE machines in public elections likely results in ‘a debasement or dilution of the weight of [Plaintiffs’] vote[s],’ even if such conduct does not completely deny Plaintiffs the right to vote.” *Id.* at 1322 (quoting *Bush v. Gore*, 531 U.S. 98 at 105 (alterations in original)).

Elections conducted using the iVotronic system do not meet constitutional standards. Leading academics and computer scientists demonstrated over a decade ago that the iVotronic system was susceptible to cyberattacks that could disrupt or undermine an election. These flaws are compounded by inadequacy of the VVPAT as a substitute for paper ballots for audit purposes. And, because the iVotronics are particularly susceptible to precinct-level cyberattacks, their continued use presents a real risk that, in the event of such an attack, voters in different precincts would arbitrarily be treated differently—that is, whether a voter’s ballot is counted would depend upon which precinct they lived in. These flaws, taken together, render the iVotronic machines constitutionally deficient.


III. Conclusion

We strongly urge you to take immediate steps to ensure that no North Carolina voter will be required to use the iVotronic system in 2020. The Board must guarantee that no voters’ constitutional rights are violated by the continued use of the iVotronic system, either by immediately decertifying the system or by committing that, if the legislature extends the decertification deadline, it will not grant any county an extension of the deadline to discontinue the use of that system. The Board should actively support counties still relying on iVotronic machines in rapidly implementing new systems before early voting for the presidential primaries begins.

Failure to take immediate steps to comply with the Constitution and properly secure the voting rights of North Carolina voters will result in litigation.

We would be happy to discuss these issues further in person or by phone. I can be reached at jess.marsden@protectdemocracy.org and (202) 672-4812.

Sincerely,

A handwritten signature in black ink, appearing to be 'JM' with a stylized flourish.

Jessica Marsden
Counsel, Protect Democracy
NC Bar No. 50855

Cc: All members of the NCSBE
Katelyn Love, NCSBE General Counsel